

## Enclosure Type and Classifications

Summary of Non-Hazardous location enclosure types commonly recognized in North America. UL, CSA and NEMA Type ratings are based on similar classifications and definitions, refer to each respective organization for specific details. These standards provide a system for specifying the enclosures of electrical equipment on the basis of the degree of protection provided by the enclosure.

<i>Type</i>	<i>Classification</i>	<i>Definitions</i>
1	General Purpose	Intended for indoor use, primarily to provide protection for enclosed parts in locations without unusual service conditions.
2	Drip Proof	Intended for indoor use, primarily to provide protection against limited amounts of falling water or dirt.
3	Rain Tight, Dust Tight, Sleet (ice) Resistant	Outdoor use to provide a degree of protection against windblown dust, windblown rain and sleet; undamaged by the formation of ice on the enclosure.
3S	Rain Tight, Dust Tight, Sleet (ice) Resistant	Outdoor use to provide a degree of protection against windblown dust, windblown rain and sleet; external mechanism remains operable when ice laden.
3R	Rainproof, Sleet (ice) Resistant	Outdoor use to provide a degree of protection against falling rain and sleet; undamaged by the formation of ice on the enclosure.
4	Watertight and Dust Tight	Indoor or outdoor use to provide a degree of protection against falling rain, splashing water and hose-directed water; undamaged by the formation of ice on the enclosure.
4X	Watertight, Dust Tight and Corrosion Resistant	Indoor or outdoor use to provide a degree of protection against falling rain, splashing water and hose-directed water; undamaged by the formation of ice on the enclosure; Corrosion Resistant
6	Submersible	Indoor or outdoor use to provide a degree of protection against entry of water during temporary submersion at a limited depth; (tested to a depth of 6 feet for 30 minutes)
6P	Submersible	Indoor or outdoor use to provide a degree of protection against entry of water during temporary submersion at a limited depth; (tested to a depth of 6 feet for 24 hours)

## IP (Ingress Protection) Ratings

Condensed summary of IP ratings as defined in the international standard IEC 60529. This standard provides a system for specifying the enclosures of electrical equipment on the basis of the degree of protection provided by the enclosure.

The IEC designation consists of the letters “IP” followed by two numerals (ex: IP65). The first numeral indicates the degree of protection provided by the enclosure with respect to solid foreign objects (dust, dirt, etc.) entering the enclosure. The second numeral indicates the degree of protection provided by the enclosure with respect to the harmful ingress of water.

IP

<i>Ist Code Number</i>	<i>Level of Protection Against the Ingress of Solid Foreign Bodies</i>
0	No protection
1	≥ 50mm diameter
2	≥ 12.5mm diameter
3	≥ 2.5mm diameter
4	≥ 1.0mm diameter
5	Dust protected
6	Dust tight

<i>2nd Code Number</i>	<i>Level of Protection Against Water Intrusion</i>
0	No protection
1	Vertically dripping water
2	Vertically dripping water, angled 15 degrees
3	Water spraying, angled up to 60 degree
4	Water splashing from any direction
5	Low pressure water jets from any direction
6	Powerful water jets from any direction, test duration at least 3 minutes
7	Temporary immersion in water up to 1 meter, test duration 30 minutes
8	Continuous submersion

*Example:* Enclosure with IP67 rating is dust tight and has a degree of protection against temporary immersion in water up to 1 meter, test duration 30 minutes

Reference IEC 60529 standard for more details on IP testing.